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ENERGY STAR
Representative,
call the toll free
ENERGY STAR
Hotline at
1-888-STAR YES
(1-888-782-7937)
or contact:

Director
ENERGY STAR
Buildings
US EPA (6202J)
401 M Street, SW
Washington, DC
20460

[HTTP://www.epa.gov/buildings](http://www.epa.gov/buildings)

AN ENERGY STAR BUILDINGSSM AND GREEN LIGHTS[®] CASE STUDY FOR Alexandria, VA Public Schools

Project Director

Larry Gilbertson, Director of Educational
Facilities

Partner Since

1995

Total Committed Square Footage

1.6 million

Location

Alexandria, VA

"Since 1991, our energy consumption has decreased by 20-25 percent, even though we have added air conditioning to buildings that never had cooling systems. In addition, we have installed 4,000 computers and thousands of televisions without increasing our energy usage."



– Larry Gilbertson,
Director of Educational Facilities

The Alexandria Public School system is realizing the benefits energy-efficient lighting can have on its bottom line.

Since joining the U.S. Environmental Protection Agency's (EPA) Green Lights[®] Partnership and upgrading 100 percent of its lighting, the public school system is saving more than \$300,000 a year. In one school alone, the annual energy bill decreased by more than 50 percent as a result of the upgrade efforts.

To further its energy savings and pollution reductions, the school system joined EPA's ENERGY STAR BuildingsSM Partnership in 1997, a five-stage strategy for upgrading whole-building operating efficiency. The school system wanted to go beyond lighting upgrades and discover even more ways to improve school facility efficiency and reduce costs through participation in ENERGY STAR Buildings.

		Progress to Date
Project Costs	Total Expenditures	\$800,000
	Dollars Per Square Foot	\$0.50
	Total Square Footage Upgraded	1,591,470
	Percent Upgraded	100% – Lighting
Cost Savings	Annual Dollar Savings	\$300,000
	Dollar Savings Per Square Foot	\$0.19
	Internal Rate of Return (IRR)	19%
Energy Savings	Annual kWh Savings	1,542,000
Pollution Prevention	Annual Carbon Dioxide (lbs.)	2,500,000
	Equivalent Cars off the Road	250
	Equivalent Acres of Trees Planted	342



Alexandria, Virginia Public Schools has a total of 22 buildings, 16 of which are schools, that are involved in the upgrade process through the ENERGY STAR Buildings and Green Lights Partnership.

Mt. Vernon Elementary and James K. Polk Elementary are the school system's two pilot buildings. As part of the five-stage energy-efficiency upgrade strategy, Mt. Vernon Elementary replaced its windows with ones that more energy efficient, and installed a new, high-efficiency chiller and boiler. The school also plans to begin work on a new roof to help with energy savings. To date, Mt. Vernon Elementary has reported annual energy savings of \$24,000 for electricity and \$54,000 for natural gas.

In addition to upgrading its lighting, James K. Polk Elementary has installed a new, energy-efficient chiller. Over the next five to six years, the school plans to install energy-efficient windows and boilers, and to re-roof the building. The elementary school is already realizing an annual electricity bill savings of \$10,000.

Alexandria, Virginia Public School system continues to upgrade its schools and buildings, focusing on reducing climate control loads and upgrading heating and cooling equipment. "Teachers who had never taught in an air conditioned environment appreciate the comfort the new equipment provide to the classroom. They realize how hard it is for students to concentrate when they are uncomfortable," said Larry Gilbertson, Director of Educational Facilities.

In addition to providing enhanced comfort and bottom line savings, the installation of energy-efficient lighting and building technologies is reducing the amount of air pollutants emitted into the community.